



US005924398A

United States Patent [19][11] **Patent Number:** **5,924,398****Choi**[45] **Date of Patent:** ***Jul. 20, 1999**[54] **FLOW IMPROVEMENT VANES IN THE INTAKE SYSTEM OF AN INTERNAL COMBUSTION ENGINE**

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Attorney, Agent, or Firm—Donald A. Wilkinson[*] **Notice:** This patent is subject to a terminal disclaimer.[57] **ABSTRACT**

An air diffuser (20) for an air intake system of an internal combustion engine. The air intake system includes a throttle body (22) up stream from an intake manifold (24), with the air diffuser (20) mounted between them. The air diffuser (20) includes vanes (62,64) extending into its main bore (52) in order to diffuse and redirect the air flowing from the throttle body (22) into the intake manifold (24). An EGR assembly (70) is mounted to the manifold (24) just downstream of the inlet to the manifold (24). The diffusion and redirection of the air reduces the noise emanating from the intake manifold (24) for particular engine operating conditions, and also reduces the backflow of EGR gasses into the throttle body (22).

[21] **Appl. No.:** **08/944,578**[22] **Filed:** **Oct. 6, 1997**[51] **Int. Cl.⁶** **F02M 29/00**[52] **U.S. Cl.** **123/184.21; 123/184.53; 123/590**[58] **Field of Search** **123/590, 184.21, 123/593, 184.53**[56] **References Cited****U.S. PATENT DOCUMENTS**

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20 Claims, 3 Drawing Sheets